

Solar Hot Water

Troy Dainty
Net Zero Solar
Licensed Solar Plumber
ROC 259521

Types of Solar Hot Water Systems

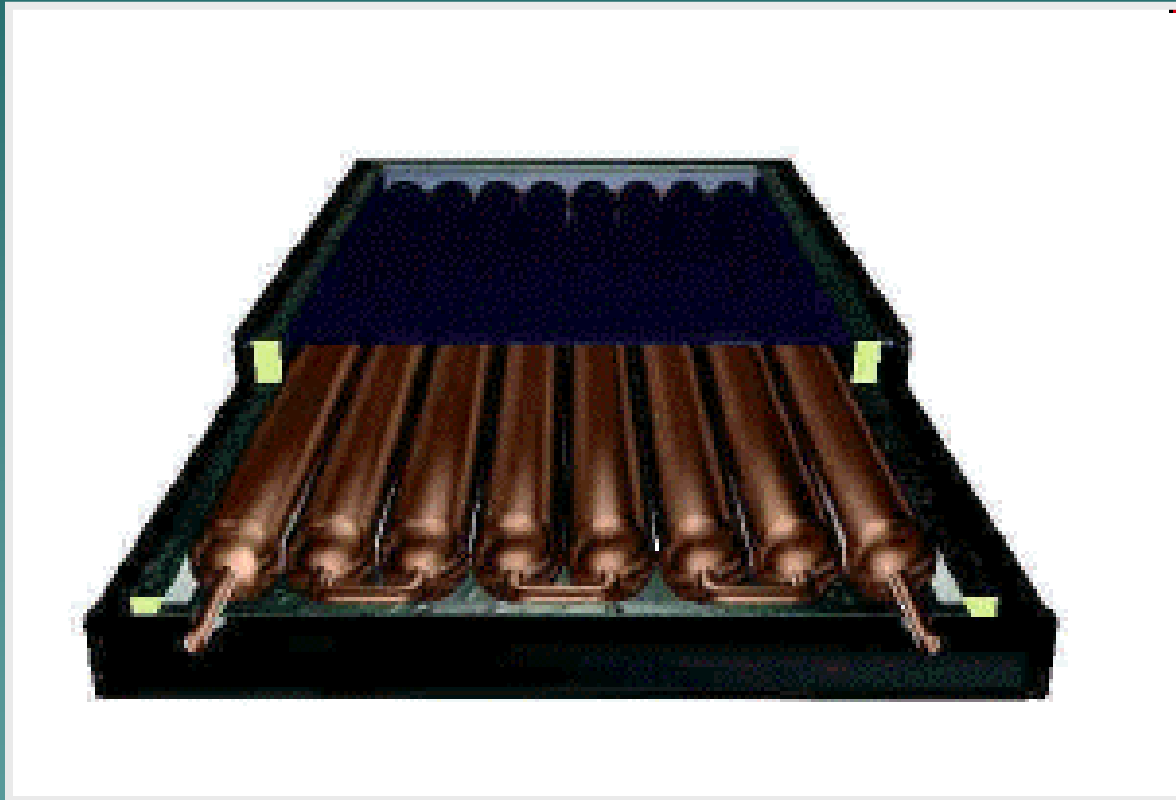
◆ Passive

- Copperheart
- Batch collectors
- Matting systems

◆ Active

- Evacuated tube
- Drainback
- Closed-loop Antifreeze

Copperheart



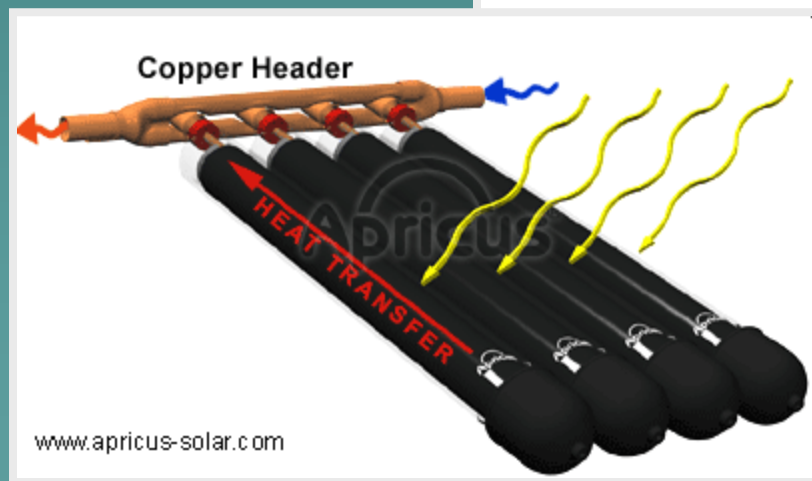
Batch Collectors



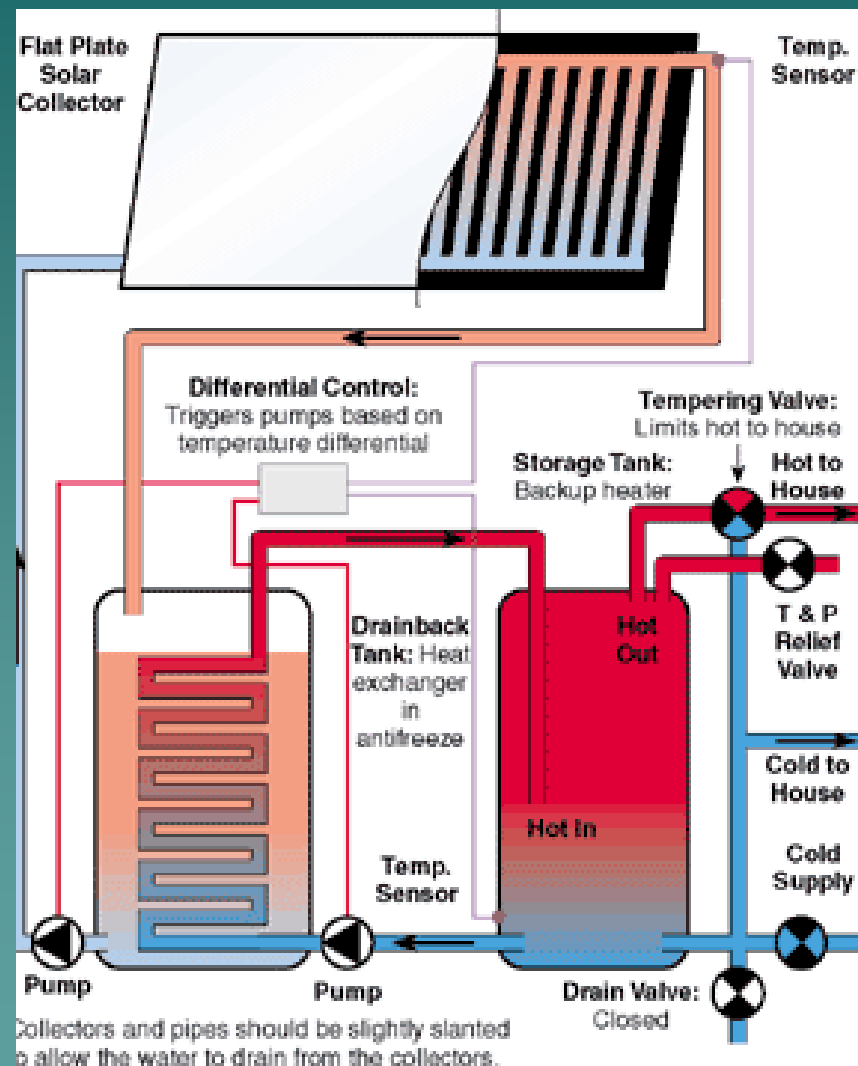
Matting Systems



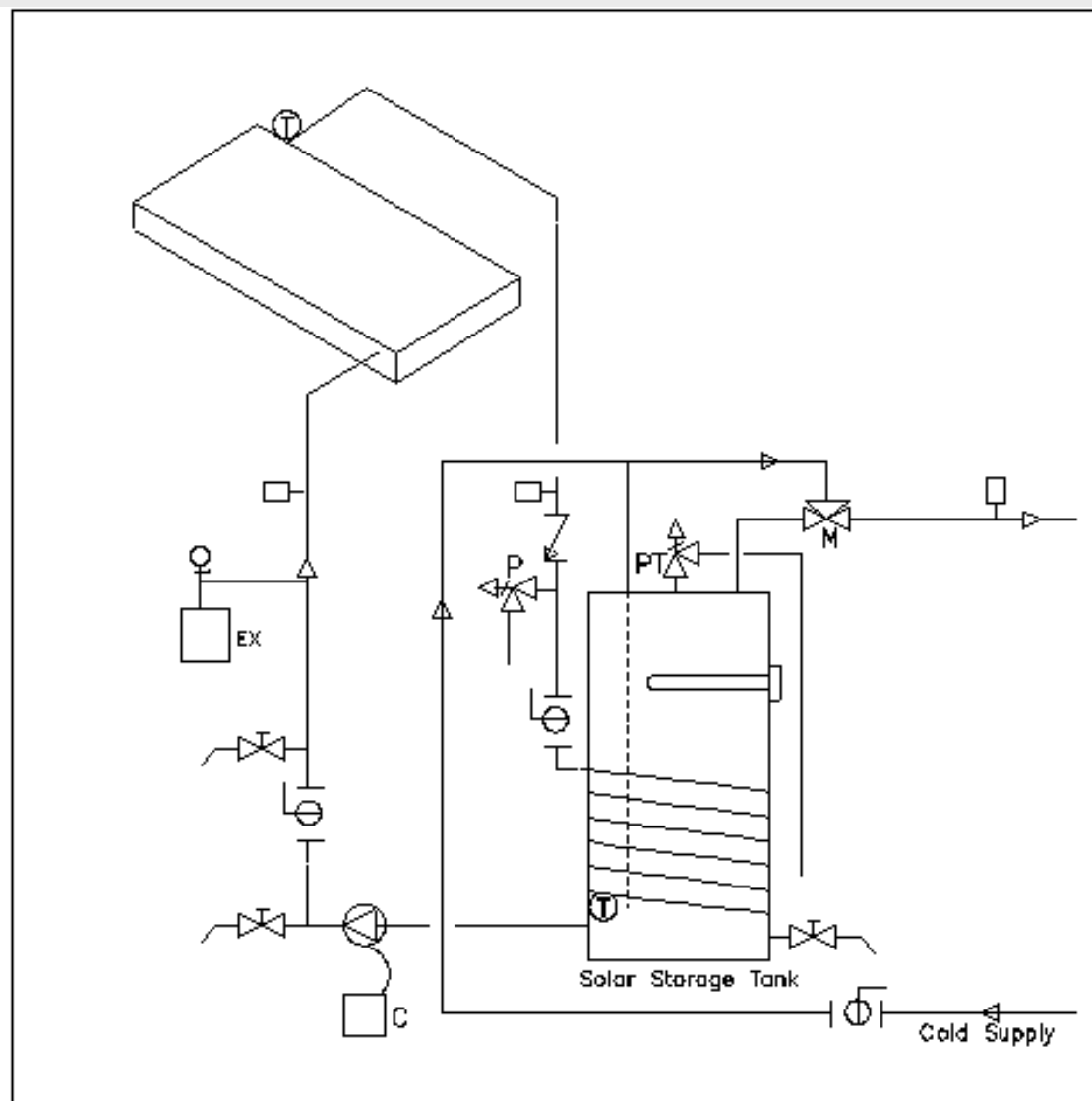
Evacuated Tube



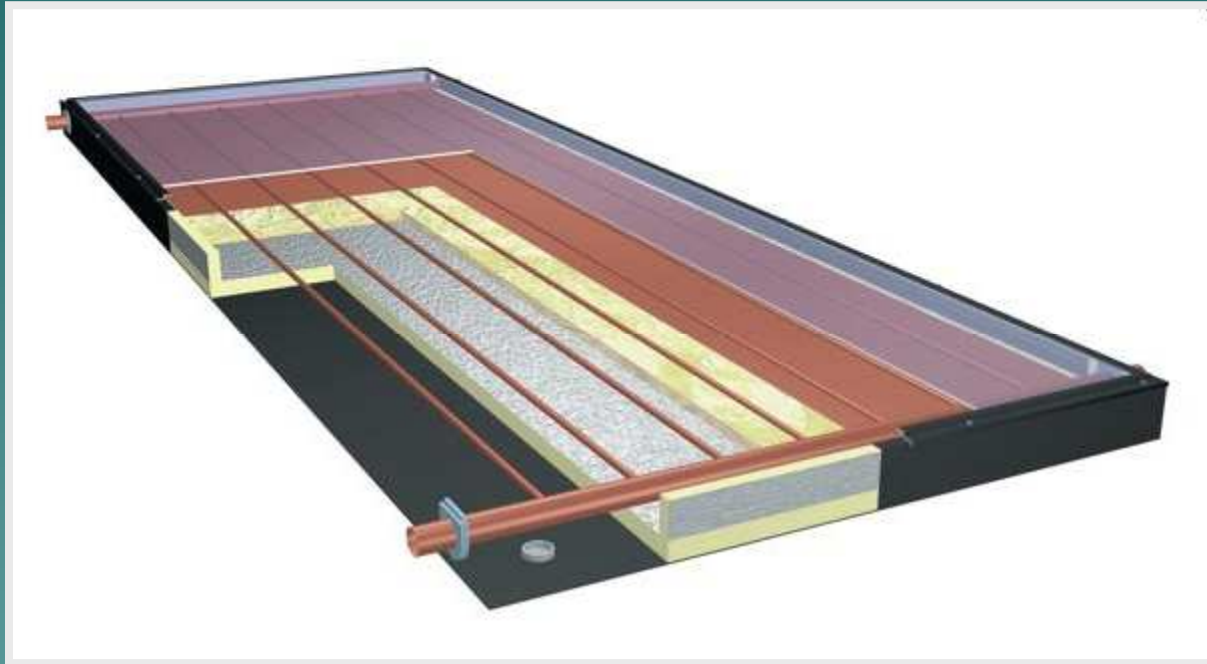
Drainback



Closed-Loop Antifreeze



Flat Plate Collector Details



Energy Savings—Passive System

SOLAR WATER HEATING CERTIFICATION AND RATING



SRCC OG-300

CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER: **SunEarth, Inc.**
8425 Almeria Avenue
Fontana, CA 92335 USA
(909) 434-3100
(909) 434-3101 Fax

SYSTEM NAME: CopperHeart

SYSTEM TYPE: Direct Integral Collector Storage

LOCATION:

Description: , No Controller, No Supply Side Heat Exchanger , No Load Side Heat Exchanger , Freeze Tolerance: 20 F, Fluid Class I, Electric Auxiliary Tank With Reflective 5/16" (0.8 Cm) Insulation Blanket Certification is based on a System Test.

System Model_name	Cert 300#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel area(Sq-m)	Total Panel area(Sq-ft)	Solar Tank Vol(l)	Solar Tank Vol(g)	Aux Tank Vol(l)	Aux Tank Vol(g)	SEF	Annual Savings (kWhr)	Annual Solar Fraction
CP-30	1992011E	01-OCT-92	SunEarth, Inc.	CP-30	1.8	19.8			189	50	1.4	1969	.54
CP-40	1992011F	01-OCT-92	SunEarth, Inc.	CP-40	2.3	24.9			189	50	1.5	2177	.6
CP-20	1992011H	11-OCT-99	SunEarth, Inc.	CP-20	1.2	12.7			189	50	1.2	1469	.4

Energy Savings—Active System

SOLAR WATER HEATING CERTIFICATION AND RATING



SRCC OG-300

CERTIFIED SOLAR WATER HEATING SYSTEM

SUPPLIER:

SunEarth, Inc.

8425 Almeria Avenue
Fontana, CA 92335 USA
(909) 434-3100
(909) 434-3101 Fax

SYSTEM NAME:

SolaRay

SYSTEM TYPE:

Indirect Forced Circulation

LOCATION:

AZ-TUCSON



Description: Glazed Flat-Plate, Differential Controller, Tank Wrap Around Heat Exchanger with a Double Wall and Positive Leak Detection, No Load Side Heat Exchanger, Freeze Tolerance: -60 F, Fluid Class II, Electric Auxiliary Tank With Reflective 5/16" (0.8 Cm) Insulation Blanket

System Model_name	Cert 300#	Cert Date	Collector Panel Manufacturer	Collector Panel Name	Total Panel area(Sq-m)	Total Panel area(Sq-ft)	Solar Tank Vol(l)	Solar Tank Vol(g)	Aux Tank Vol(l)	Aux Tank Vol(g)	SEF	Annual Savings (kWhr)	Annual Solar Fraction
TE32P-80-1	1993001A	23-MAR-93	SunEarth, Inc.	EP-32	3.1	32.8	303	80			1.9	2812	.77
TE32C-80-1	1993001B	23-MAR-93	SunEarth, Inc.	EC-32	3.1	32.8	303	80			1.9	2905	.79
TE40C-80-1	1993001D	23-MAR-93	SunEarth, Inc.	EC-40	3.8	40.9	303	80			2.4	3118	.85
TE40C-120-1	1993001M	18-DEC-06	SunEarth, Inc.	EC-40	3.8	40.9	454	120			2.1	3103	.85
TE40P-120-1	1993001T	18-DEC-06	SunEarth, Inc.	EP-40	3.8	40.9	454	120			2	3012	.82
TE40P-80-1	1993001C	23-MAR-93	SunEarth, Inc.	EP-40	3.8	40.9	303	80			2.2	3034	.83

Cost Breakdown

- ◆ Active Closed-Loop Antifreeze System
- ◆ Typical installed cost \$5250
- ◆ Adders \$100 and up
- ◆ TEP Rebate of \$1508
- ◆ Arizona Tax Credit \$935
- ◆ Federal Tax Credit of \$1122
- ◆ Net Cost of \$1685